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A45D 20/50

(52) UK CL (Edition T)
A4V V11 V29D

(56) Documents Cited

GB 2294200 A	**GB 2259008 A**
GB 2230184 A	**GB 1556352 A**
GB 0490245 A	**JP 060007217 A**
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US 4173231 A	**US 3840030 A**

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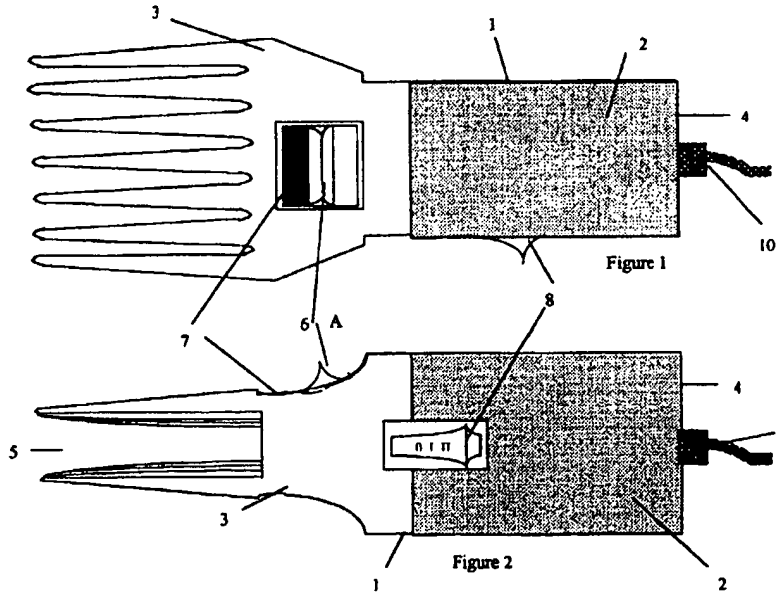
(54) Abstract Title
Hair Dryer

(57) A hair dryer intended for straightening very curly hair includes a comb 3 with two spaced parallel rows of teeth and attached to a handle/body unit which has means for drawing in cold air through a vent 4 and expelling temperature-controlled hot air through a gap 5 between the two rows of teeth. An adjustable vent 7 is controlled by knob 6 to adjust the volume of air expelled through the gap. The comb may be integrally formed with or detachable from the dryer. A temperature control switch 8 is provided.



GB 2 365 335 A

The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

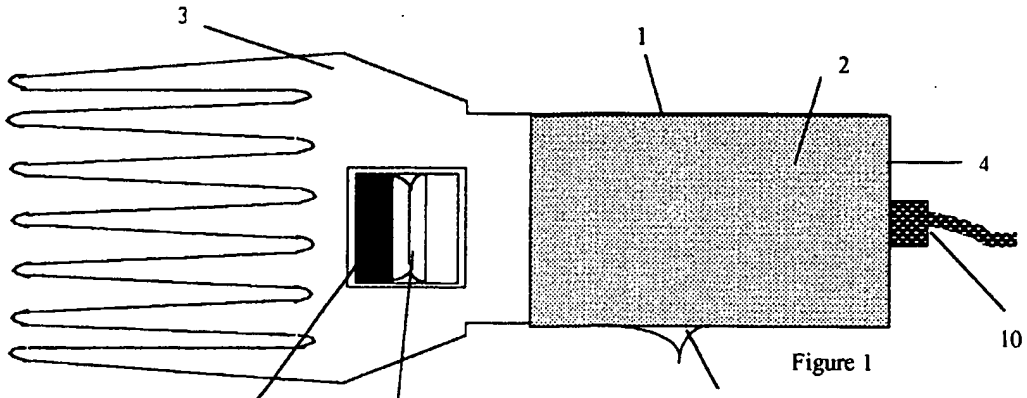


Figure 1

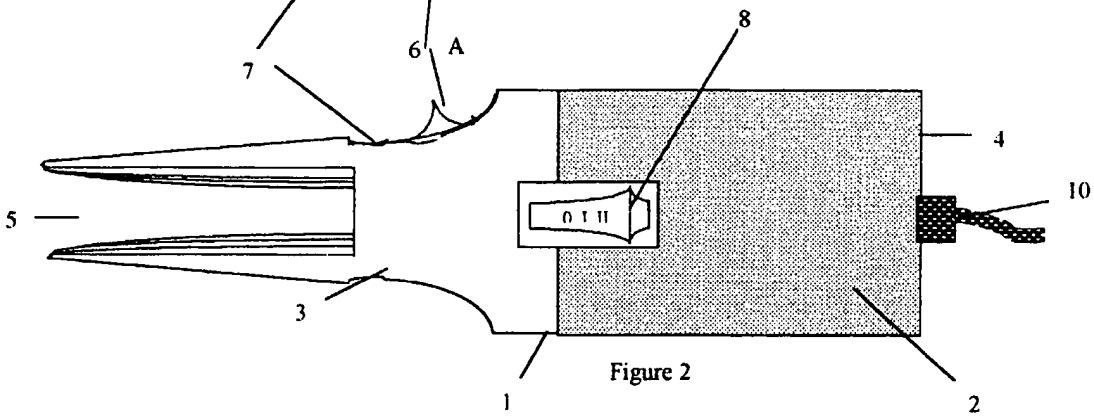


Figure 2

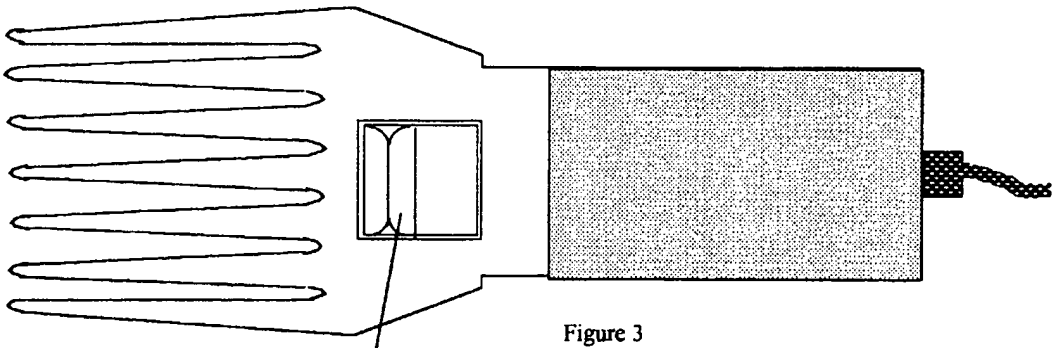


Figure 3

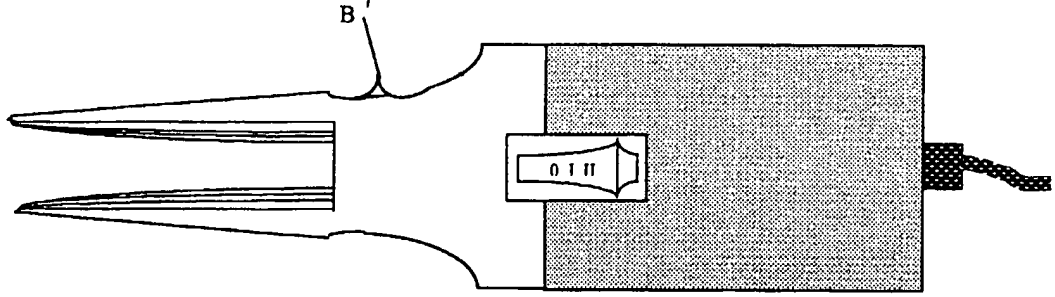


Figure 4

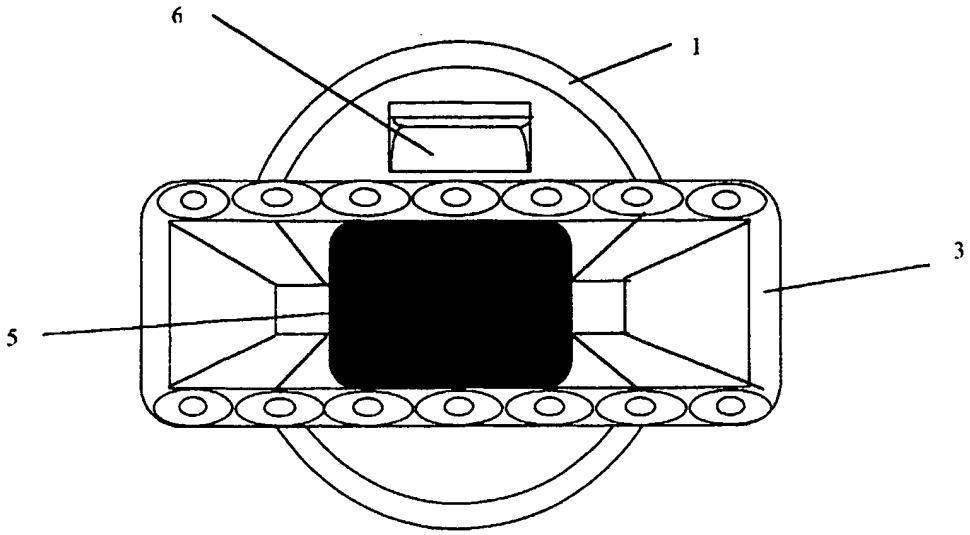


Figure 5

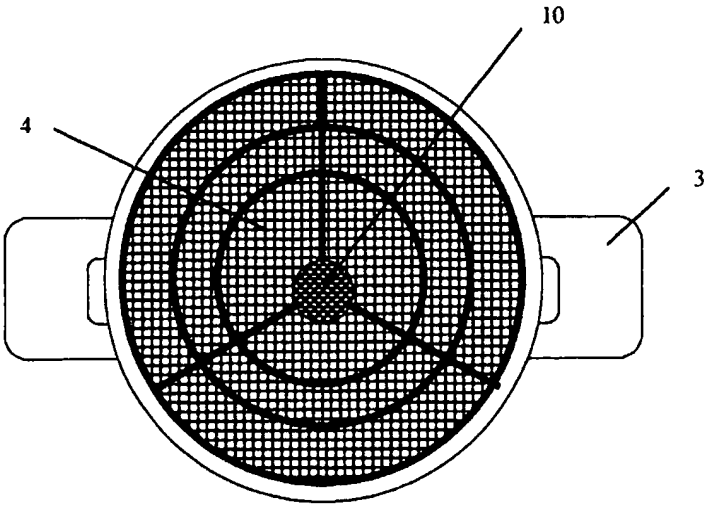


Figure 6

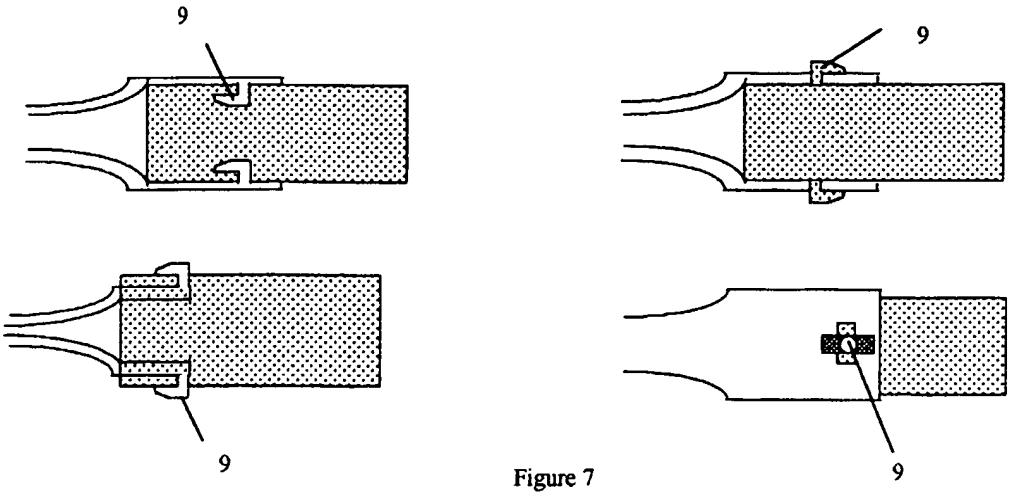


Figure 7

HAIR DRYER

DESCRIPTION

This invention relates to a hair dryer.

A hair dryer is a well-known domestic electrical appliance used for drying wet hair, or styling dry hair in combination with other tools. It has a body which houses the electronic components that generate a hot or cold flow of air, and, in most models today, a handle which is constructed at an angle to the body. A detachable nozzle is often provided to concentrate the airflow into a smaller area.

Current hair dryer designs are ideal for drying straight hair or hair with large curls. They are however not suitable for hair with very tight curls, that is, hair whose curl diameter is of the order of a few millimetres such as sub-Saharan African hair.

The object of this invention is to provide a hair dryer which straightens very tightly curled hair while drying the hair.

In order to dry very curly hair, and straighten it at the same time, the hair needs to be combed away from the scalp while directing hot air through it at approximately right angles to the hair shaft. This requires two things: first that there be a comb on the end of the dryer, and secondly, that the handle be in the same horizontal plane as the main body in order that effort can be applied in the most efficient way to pull the comb's teeth through the hair. The specifications of the thermostat and heat generating components must be such that steam emanating from the hair at very close proximity to the main vent does not trigger the thermostat and/or other components to switch the power off.

The following features are essential to the invention:

- A body encasing the electronic components which suck in air at room temperature through one end of the frame, heats it up, and forces out the heated air through the other end of the frame.

- A handle which is in the same horizontal plane as, and forms part of the body. In order to ensure comfortable handling of the dryer, the area over which the dryer is handled is ingrained or covered with a heat-resistant or insulating substance.

- A comb which has two rows of tapering teeth which end in smooth rounded tips to ensure smooth passage through the hair. The rows of teeth are separated by a gap through which the air flows. The material with which the comb is made is strong, durable, and flexible in order to withstand the force required to pull the comb through very tight curly hair. The comb can be provided in two ways: as an attachment which latches onto the body, or as an integral part of the body. If the comb is provided as an attachment, then an assortment can be provided as part of the hair dryer package, each comb differing from the others in the size of its teeth. If the comb is provided as an integral part of the body of the dryer, then a wide-toothed comb gives the most general-purpose functionality.

- An airflow control sliding knob which covers a small vent situated on the top of the comb behind the teeth and in the path of the airflow. It can move forward and backwards, letting out as much air as is necessary or none, thereby allowing the user to control the volume of air that flows out through the main vent. The control knob may be engineered such that it either slides smoothly over the vent, or clicks into grooves in predetermined positions. The volume of air allowed to escape through the small top vent using this knob determines the extent to which the hair is straightened, and to some extent, how quickly the hair dries. That is, the straightest hair is achieved when this vent is closed and the temperature control switch is at its hottest setting.

- A means by which power is supplied to the electronic components of the appliance.

- A temperature-control switch.

A specific embodiment of the invention is described below by way of example with reference to the accompanying drawing in which: -

Figures1 and 3 show the aerial view, illustrating the horizontal body incorporating the handle, the airflow control sliding knob with the vent underneath it, the shape of the comb, and the heat-resistant material or insulating covering of the handle.

Figures 2 and 4 show the side view and illustrate the separation of the two rows of teeth, and the tapering nature of the comb's teeth.

Figures 1 and 2 show the airflow control knob in position A at a setting where the top air vent is partially open. Figures 2 and 4 show the knob in position B where the top air vent is fully closed. These figures illustrate the sliding action of the airflow control knob.

Figure 5 shows the front view and illustrates the aperture between the two rows of teeth through which the main airflow passes out.

Figure 6 shows the back view and illustrates the vent, covered with wire gauze, into which air is sucked and subsequently heated up and forced through the aperture at the front.

Figure 7 shows three options for securing a comb attachment to the main body of the hairdryer.

Referring to the drawing, the dryer comprises a body 1, handle 2, and comb 3 integrated horizontally on the same frame. The main airflow comes in from the gauze covered opening 4 at the back and out through the aperture at the front 5. The airflow control knob 6 covering the small vent 7 on top of the dryer behind the comb's teeth provide air volume control. The temperature control switch 8 provides a number of settings which determine the temperature of the air blown through the front aperture.

In order to reduce the volume of air coming out through the main vent, the air flow control knob 6 can be moved from position B where the small vent is completely closed towards and beyond position A where the air vent is completely open.

If the comb 3 is provided as an attachment to the main body 1, then a means 9 of rigidly securing it to the main body must be provided.

Power is supplied by means of an electrical power cable 10 connected to the mains power supply. It is preferable that the means of supplying power is not cumbersome to the user, and if possible, be cordless.

HAIR DRYER

CLAIMS

1. A hair dryer comprising a body and a handle as integral parts of a horizontal frame - the handle being ingrained or covered with a heat-resistant or insulating material, a comb with two rows of teeth, a source of heated air stream arranged such that the air stream passes between the comb's two rows of teeth (main vent), and means for controlling the volume of air that flows out through the main vent.

2. A hair dryer as claimed in claim 1 in which the comb is detachable.

3. A hair dryer substantially as described herein with reference to Figures 1-4 of the accompanying drawing.

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Application No: GB 0019076.9 4 **Examiner:** R E Hardy
Claims searched: ALL **Date of search:** 17 January 2001

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): A4V (V11 V29D)

Int Cl (Ed.7): A45D (20/10 20/12 20/50 20/52)

Other: Online : EPODOC,WPI,JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage			Relevant to claims
X	GB2294200	A	PHILIPS : See the Figures	1,2
X	GB2259008	A	HIRZEL : See Figures 5,6 and note p.11 lines 1-2	1,2
Y	GB2230184	A	CRITCHLOW : See the Figures and p.6 line 21	1,2
Y	GB1556352	A	BRAUN : See the Figures	1,2
A	GB0490245	A	GAUDICH : See the Figures	1
X	JP6-007217	A	MATSUSHITA : See the Figures and WPI Abstract	1,2
X,Y	US6009883	A	MORROW : See the Figures	1,2
A	US5553632	A	BURKHARDT : See the Figures	1
X	US5546674	A	LANGE : See the Figures	1,2
A	US4590687	A	CARUSO : See the Figures	1,2
X	US4173231	A	ISINO : See Figures 4-9	1,2
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